

REMARKS

STATUS OF CLAIMS

Claims 11, 27, 37, 42, and 66 have been amended herein, as described below.

Claims 90-97 have been added.

No claims have been cancelled or withdrawn.

Claims 1-97 are currently pending in the reissue application.

SUMMARY OF THE REJECTIONS/OBJECTIONS

Claims 11-21, 27-31, 37-41, 42-51, 61-75, and 85-89 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over “Rdb/VMS: A Comprehensive Guide,” pages 91-95, by Lilian Hobbs and Ken England, Digital Press, 1991 (hereinafter “*Rdb*”). The rejections are respectfully traversed.

Note that Claims 1-10, 22-26, 32-36, 52-56, 57-60, 76-80, and 81-84 have been allowed.

A. CLAIMS 11, 27, 37, 42, AND 66

(1) INTRODUCTION TO CLAIMS 11, 27, 37, 42, AND 66

Claim 11 features:

“A method for producing a copy of data from a first database, the method comprising the steps of:

locking a first set of data in the first database;

after locking the first set of data,

requesting each process in a plurality of processes to obtain its own snapshot

[times] time from a database server associated with said first database,

wherein the snapshot times cause all subsequent reads of the first

database by the plurality of processes to return data from the first

database as of said snapshot times;

waiting a particular period of time for the plurality of processes to be assigned snapshot times;

releasing the locks on the first set of data in the first database;

using a successful set of said plurality of processes to extract a copy of the first set of data from the first database, wherein:

said successful set **of said plurality of processes** includes only those processes of the plurality of processes that were assigned a snapshot time within the particular period of time; and

before the successful set of said plurality of processes finishes extracting the copy of the first set of data, the state of the first set of data is changed; and

storing the copy of the first set of data separate from said first set of data.”

*(Emphasis as indicated by **bold type** is added to highlight changes from the previously filed preliminary amendment; the same highlighted changes are made to Claims 27 and 37.)*

Claim 42 features:

“A method for extracting data from a first database, the method comprising the steps of:

causing **each process** in a set of two or more processes to obtain **its own snapshot time** that cause all subsequent reads of the first database by each process in the set of processes to return data from a same state of at least a portion of the first database as will be returned to all other processes in the set of processes;
causing the set of processes to extract a copy of the portion of the first database; **and**
wherein before the set of processes finish extracting said copy, the state of the portion of the first database is changed.”

*(Emphasis as indicated by **bold type** is added to highlight changes from the previously filed preliminary amendment; the same highlighted changes are made to Claim 66.)*

Thus, Claim 11 as amended herein features “requesting each process requesting each process in a plurality of processes to obtain its own snapshot...time...” Claims 27 and 37 are amended hereinto include the same features. Similarly, Claim 42 features “requesting each

process in a set of two or more processes to obtain its own snapshot...time..." Claim 66 includes the same features.

With each process having its own snapshot time, Claims 11, 27, 37, 42 and 66 are different from multiple reads that are performed by a process with a particular snapshot time since each of the multiple reads does not have its own snapshot time as in Claims 11, 27, 37, 42, and 66.

Also, Claim 11 as amended herein features "before the successful set of said plurality of processes finishes extracting the copy of the first set of data, the state of the first set of data is changed..." Claims 27 and 37 are amended herein to include the same features. Similarly, Claim 42 as amended herein features "before the set of processes finish extracting said copy, the state of the portion of the first database is changed." Claim 66 is amended herein to include the same features.

With the change to the data or portion being changed before the copy is extracted, Claims 11, 27, 37, 42 and 66 are different than merely locking the data or portion for a period long enough to prevent such a change to the data or portion while being used.

(2) THE OFFICE ACTION'S CITATIONS FROM THE *RDB* REFERENCE

The Office Action's rejection of Claims 11 and 42 notes that the *Rdb* reference does not specify the number of processes and specifically points out that the *Rdb* reference does not teach either a "plurality of" processes to be requested with respect to Claim 11 or "two or more" processes with respect to Claim 42. The Office Action's rejection of Claims 11 and 42 is therefore based on the proposition that a "read" may be broadly read as a "process," and therefore "having more than one read would suggest more than one processes. The Office Action notes that "the purpose of having a snapshot is to cause subsequent reads to return from the same state."

As a result of these amendments to Claims 11, 27, 37, 42, and 66, each process has "its own" snapshot time. Because each process has its own snapshot time, it is possible (though not mandatory) for the snapshot times to differ. In contrast, in the disclosure of the *Rdb* reference, multiple reads use the same snapshot time, because "the purpose of having a snapshot is to cause subsequent reads to return from the same state," as noted by the Office Action as discussed above. Thus, even with the *Rdb* reference teaching more than one read

for a snapshot and accepting the Office Action's proposition for the moment that each read operation is a "process," the *Rdb* reference fails to disclose that each read/process has "its own snapshot time" as in Claims 11, 27, 37, 42, and 66. In fact, the *Rdb* reference teaches exactly the opposite, namely that each read uses the same snapshot time so that each read is based on the same state, and thus each read/process does not have "its own snapshot time" as in Claims 11, 27, 37, 42, and 66.

In addition, given the proposition that a "read" or "read operation" may be broadly interpreted to mean a "process," it then does not make sense to talk about subsequent reads by the "processes" since each subsequent read would be another process. Thus, given the Office Action's equating a "read" to a "process," there is never a subsequent read by the same "process." Yet Claims 11, 27, 37, 42, and 66 feature that the snapshot times "cause all subsequent reads...by...the...processes to return data," and thus if each read is a process, then such processes never make the "subsequent reads" as featured in Claims 11, 27, 37, 42, and 66.

Therefore, the Applicant respectfully submits that the *Rdb* reference fails to disclose, teach, suggest, or render obvious that "each process" has "its own snapshot time" as featured in Claims 11, 27, 37, 42, and 66.

In addition, with regards to Claims 11, 27, and 37, the first two steps are "locking a first set of data in the first database" and "after locking the first set of data," and a later step of Claims 11, 27, and 37 is "releasing the locks on the first set of data in the first database." However, the only references to "locks" or "locking" in the *Rdb* reference is in the paragraph that begins at the bottom of page 91 that states: "Snapshot transactions do not participate in lock conflict situations with updating transactions. An end-of-year report, for example, could run for hours analyzing masses of data in the database without being involve in lock conflicts with updating transactions. There is one instance where snapshot transactions are involved in lock conflicts with other transactions. This occurs when another transaction has started that has reserved the database areas in EXCLUSIVE mode. A snapshot cannot start. The converse is also true."

Thus, the *Rdb* reference explains that there is no locking involved in the use of a snapshot transaction since because, with one exception, there are no "lock conflict situations", whereas in Claims 11, 27, and 37 such lock conflicts could arise as a result of "locking the

first set of data in the first database.” As explained by the *Rdb* reference, the only lock conflict situation arises when another transaction is in EXCLUSIVE mode, and in this case, the snapshot cannot start, yet Claims 11, 27, and 37 feature requesting the processes to obtain snapshot times. Thus, the Applicant respectfully submits that not only does *Rdb* fail to disclose the locking features of Claims 11, 27, and 37, the *Rdb* reference in fact teaches away from incorporating those features with the use of snapshot transactions.

Therefore, the Applicant respectfully submits that the *Rdb* reference fails to disclose, teach, suggest, or render obvious “locking a first set of data in the first database,” “after locking the first set of data,..” and “releasing the locks on the first set of data in the first database” as featured in Claims 11, 27, and 37

(3) CONCLUSION OF DISCUSSION OF CLAIMS 11, 27, 37, 42, AND 66 AND *RDB*

Because the *Rdb* reference fails to disclose, teach, suggest, or in any way render obvious that “each process” has “its own snapshot time,” the Applicant respectfully submits that, for at least the reasons stated above, Claims 11, 27, 37, 42, and 66 are allowable over the art of record and are in condition for allowance.

Furthermore, because the *Rdb* reference fails to disclose, teach, suggest, or in any way render obvious the steps of “locking a first set of data in the first database,” “after locking the first set of data,..” and “releasing the locks on the first set of data in the first database,” the Applicant respectfully submits that, for at least the reasons stated above, Claims 11, 27, and 37 are allowable over the art of record and are in condition for allowance.

B. CLAIMS 12-21, 28-31, 38-41, 43-51, 61-65, 67-75, AND 85-97

Claim 90 is dependent upon Claim 1, Claims 12-21 and 91 are dependent upon Claim 11, Claim 92 is dependent upon Claim 22, Claims 28-31 and 93 are dependent upon Claim 27, Claim 94 is dependent upon Claim 32, Claims 38-41 and 95 are dependent upon Claim 37, Claims 42-51, 61-65, and 96 are dependent upon Claim 42, and Claims 67-75, 85-89, and 97 are dependent upon Claim 66, and thus include each and every feature of the corresponding independent claims.

Therefore, each of Claims 90, 92, and 94 are allowable because Claims 1, 22, and 32 are allowable as indicated in the Office Action, and each of Claims 12-21, 28-31, 38-41,

43-51, 61-65, 67-75, 85-89, 91, 93, and 95-97 is therefore allowable for the reasons given above for Claims 11, 27, 37, 42, and 66. In addition, each of Claims 12-21, 28-31, 38-41, 43-51, 61-65, 67-75, and 85-97 introduces one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time. Therefore, it is respectfully submitted that Claims 90, 92, and 94 are allowable for the same reasons as Claims 1, 22, and 32 and that Claims 12-21, 28-31, 38-41, 43-51, 61-65, 67-75, 85-89, 91, 93, and 95-97 are allowable for the reasons given above with respect to Claims 11, 27, 37, 42, and 66.

CONCLUSION

The Office Action acknowledges that Claims 1-10, 22-26, 32-36, 52-56, 57-60, 76-80, and 81-84 are directed to allowable subject matter.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

To the extent necessary to make this reply timely filed, the Applicant petitions for an extension of time under 37 C.F.R. § 1.136.

If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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